

**Remarks/Arguments** begin on page 2 of this paper.

### **REMARKS**

Reconsideration and withdrawal of the rejection set forth in the Office Action dated November 11, 2005 is respectfully requested. Claims 1-31 are currently pending this application.

Claims 1-31 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,567,600 to Yoshida (hereinafter "Yoshida"). The applicants respectfully disagree with this rejection.

Dr. Ronn Brashear, an expert in chip and component circuit designs, prepared a declaration according to 37 CFR § 1.132 (referred to hereinafter as ***the 132 declaration***), filed herewith.

#### **Prior Art (Independent Claims 1, 6, 14, and 21)**

Yoshida teaches an optical amplifying medium component and an optical fiber amplifier comprising the optical amplifying medium component. [Yoshida, col. 1, lines 8-11] Yoshida's optical amplifying medium component comprises a first substrate on which an optical amplifying medium is placed and a second substrate opposite to the first substrate to sandwich the optical amplifying medium between the two substrates. [Yoshida, col. 1, lines 42-44] The substrates are provided as thin plates capable of heating and cooling the optical amplifying medium. The plates are generally Peltier effect devices and the optical amplifying medium is generally an optical fiber. [Yoshida, col. 3, lines 51-55] In addition, Yoshida teaches an erbium-doped fiber (hereinafter "EDF") sheet. The EDF sheet comprises an EDF and two temperature sensitive semiconductor devices, also termed sheet films. The sheet films possess negative temperature coefficients. [Yoshida, col. 4, lines 2-5] The

EDF is sandwiched between the two sheet films to make a laminated sheet assembly. [Yoshida, col. 4, lines 13-15]

Yoshida teaches that "the optical medium component comprises: a ***pair of substrates***, 2a and 2b, provided as thin plates." [Yoshida, col. 3 lines 51-53] Yoshida teaches that "the EDF and the thermister are arranged on one of the sheet films and then covered with another one to make a laminated sheet assembly for keeping the EDF from ***twisting, bending, and crossing***." [Yoshida, col. 4, lines 12-16]

### **Prior Art Distinguished (Independent Claims 1, 6, 14, and 21)**

To render a claim unpatentable, cited prior art must teach each element of the claim. In contrast to Yoshida, independent Claim 1 includes the language "a partially flexible substrate." The applicants respectfully submit that Yoshida intrinsically teaches the meaning of the relevant terms. The Examiner has characterized Yoshida's sheet film substrates as "thin, flexible, and transparent" in accordance to the American Heritage Dictionary. The applicants respectfully submit that this definition is contrary to Yoshida's stated intention that the sheet film substrates be inflexible in order to prevent ***twisting, bending, and crossing***.

In the 132 declaration, at paragraph 9, Dr. Brashear explains that Yoshida specifies a rigid substrate. At paragraph 10, Dr. Brashear explains that Yoshida specifies plate devices that are "inflexible, normally encased in thermally appropriate ceramic materials."

Although the definition of a term set out in a dictionary may be presumed as its ordinary and customary meaning, "the examination of the written description and drawings is necessary to determine whether the patentee has disclaimed subject matter or has otherwise limited the scope of the claims." *Apex Inc. v. Raritan Computer, Inc.*, 325 F. 3d 1364, 1374 (Fed. Cir. 2003). Here, Yoshida's proclaimed

intent that the substrates prevent twisting and bending of the EDF sandwiched therein is in direct conflict with the dictionary definition of a sheet film as flexible and consequently prone to bending. Moreover, one skilled in the art would not look to Yoshida to construct an optical amplifying medium having a flexible substrate because Yoshida explicitly teaches away from using material prone to bending or twisting. Accordingly, Yoshida does not teach an even partially flexible substrate.

In the 132 declaration, at paragraph 12, Dr. Brashear states that he believes "anyone skilled in the art would not characterize Yoshida's designs as even partially flexible." Dr. Brashear uses his expertise and the intrinsic evidence (the Yoshida reference) to determine that Yoshida does not teach a partially flexible substrate, but rather a rigid substrate. Therefore, consulting extrinsic evidence, such as The American Heritage® Dictionary, is unnecessary and inappropriate. Indeed, the use of the dictionary in this case led to the Examiner's incorrect characterization of Yoshida, at page 4 of the Office Action: "Since Yoshida states the substrate is flexible, the substrate must [be] flexible to a degree." In light of the 132 declaration, the Examiner's assertion is clearly erroneous.

Yoshida teaches the use of a pair of substrates whereas Claim 1 sets forth a single "partially flexible substrate" and "a length of pre-fabricated optical fiber secured to said substrate." Yoshida's inclusion of an additional substrate significantly differentiates it from Claim 1, for example, due to increased material cost and assembly time. Moreover, Yoshida does not secure the fiber to the substrate, but rather laminates films in order to keep the fiber in place without bending or flexing.

In the 132 declaration, at paragraph 11, Dr. Brashear states that "Yoshida relies on the lamination of films to hold the EDF in proper configuration" and that "any flexion or bending of the substrate would lead to crossing lines of the EDF." The lack of a securing mechanism in the Yoshida reference further emphasizes the

rigidness of the Yoshida films/plates. Yoshida simply would not work for its intended purpose if the plates were partially flexible.

Therefore, there is no suggestion or motivation to introduce a partially flexible substrate to the Yoshida device. Yoshida teaches away from the use of a partially flexible substrate by emphasizing the need for a rigid substrate. Those of skill in the art would recognize that Yoshida would not work for its intended purpose to prevent bending and flexing if they used a partially flexible substrate. As the 132 declaration shows, this determination can be made without resorting to extrinsic evidence. Since Yoshida does not teach a partially flexible substrate, the independent Claim 1 is allowable over the teachings of Yoshida. The independent Claims 6 and 21 are allowable for a similar reason.

In contrast to Yoshida, independent Claim 14 includes the language "a partially flexible substrate." Since Yoshida teaches away from a flexible substrate, Yoshida does not render Claim 14 unpatentable. Further, Yoshida teaches the use of two substrates whereas Claim 14 sets forth only one "flexible heat circuit." For at least these reasons, the independent Claim 14 is allowable over the teachings of Yoshida.

#### **Prior Art (Dependent Claims 2-5, 7-13, 15-20, and 22-31)**

Yoshida's prior art teaches an optical fiber wound on a reel. The optical fiber is wound such that only a portion of the optical fiber is touching the surface of the reel. [Yoshida, col. 3, lines 23-26] Yoshida specifically teaches away from using the reel because the EDF "cannot be monitored and controlled under the same conditions because the temperatures of all portions of the EDF 3 may be different from each other." [Yoshida, col. 3 lines 28-30] The Examiner at pages 4-8 of the office action asserts that it would be obvious to add additional fibers to the reel.

However, this would presumably make control even more difficult, which is in direct conflict with the teachings of Yoshida.

Moreover, the Examiner asserts on page 10 of the office action that because the claimed invention's purpose differs from Yoshida's, the use of a reel would be advantageous to the claimed invention even if its use is disadvantageous in Yoshida. The applicants respectfully disagree and contend that Yoshida's stated disadvantages relating to the use of a reel are similarly applicable in applicants' claimed invention. In this respect, the applicants' claimed invention would also suffer from the thermal gradient described in Yoshida [col. 3 lines 27 – 30] and implementing a reel in the claimed invention may render monitoring and controlling the temperature of a pre-fabricated optical fiber inefficient if not impossible. The applicants note a reel is similar to the bobbin illustrated in prior art FIG. 1 and FIG. 2 of the applicants' specification. An optical fiber may be stressed if wrapped too tightly around a reel and adding a reel increases design complexity, manufacturing cost, and assembly time. Thus, neither Yoshida (as the Yoshida reference explicitly states) nor the applicants would benefit from the use of a reel and Yoshida therefore does not teach having more than one optical fiber on a substrate. Moreover, Yoshida's prior art does not teach an optical fiber secured to more than one surface of a substrate.

#### **Prior Art Distinguished (Dependent Claims 2-5, 7-13, 15-20, and 22-31)**

Claims 2-5 are either directly or indirectly dependent on the independent Claim 1. As described above, the independent Claim 1 is allowable over the teachings of Yoshida. Accordingly, Claims 2-5 are at least allowable as being dependent on an allowable claim.

Claims 7-13 are either directly or indirectly dependent on the independent Claim 6. As described above, the independent Claim 6 is allowable over the

teachings of Yoshida. Accordingly, Claims 7-13 are at least allowable as being dependent on an allowable claim, and in the alternative for the following reasons.

Claim 7 includes the language "a second pre-fabricated optical fiber secured to said first surface." Since the prior art in Yoshida does not teach "a second pre-fabricated optical fiber secured to said first surface," the prior art in Yoshida does not render Claim 7 unpatentable. For at least these reasons, Claim 7 is allowable over the teachings of Yoshida.

Claim 8 includes the language "a third pre-fabricated optical fiber secured to said second surface." Since the prior art in Yoshida does not teach "a third pre-fabricated optical fiber secured to said second surface," the prior art in Yoshida does not render Claim 8 unpatentable. For at least these reasons, Claim 8 is allowable over the teachings of Yoshida.

Claims 9 includes the language "a second pre-fabricated optical fiber secured to said second surface." Since the prior art in Yoshida does not teach "a second pre-fabricated optical fiber secured to said second surface," the prior art in Yoshida does not render Claim 9 unpatentable. For at least these reasons, Claim 9 is allowable over the teachings of Yoshida.

Claims 11 includes the language "a second pre-fabricated optical fiber secured to said first surface." Since the prior art in Yoshida does not teach "a second pre-fabricated optical fiber secured to said first surface," the prior art in Yoshida does not render Claim 11 unpatentable. For at least these reasons, Claim 11 is allowable over the teachings of Yoshida.

Claims 12 includes the language "a third pre-fabricated optical fiber secured to said second surface." Since the prior art in Yoshida does not teach "a third pre-fabricated optical fiber secured to said second surface," the prior art in Yoshida does

not render Claim 12 unpatentable. For at least these reasons, Claim 12 is allowable over the teachings of Yoshida.

Claims 13 includes the language "a second pre-fabricated optical fiber secured to said second surface." Since the prior art in Yoshida does not teach "a second pre-fabricated optical fiber secured to said second surface," the prior art in Yoshida does not render Claim 13 unpatentable. For at least these reasons, Claim 13 is allowable over the teachings of Yoshida.

Claims 15-20 are either directly or indirectly dependent on the independent Claim 14. As described above, the independent Claim 14 is allowable over the teachings of Yoshida. Accordingly, Claims 15-20 are at least allowable as being dependent on an allowable claim, and in the alternative for the following reasons.

Claim 15 contains the language "a second length of pre-fabricated optical fiber secured to said first surface." Since the prior art in Yoshida does not teach "a second length of pre-fabricated optical fiber secured to said first surface," the prior art in Yoshida does not render Claim 15 unpatentable. For at least these reasons, Claim 15 is allowable over the teachings of Yoshida.

Claim 16 contains the language "a second length of pre-fabricated optical fiber secured to said second surface." Since the prior art in Yoshida does not teach "a second length pre-fabricated optical fiber secured to said second surface," the prior art in Yoshida does not render Claim 16 unpatentable. For at least these reasons, Claim 16 is allowable over the teachings of Yoshida.

Claims 22-31 are either directly or indirectly dependent on the independent Claim 21. As described above, the independent Claim 21 is allowable over the teachings of Yoshida. Accordingly, Claims 22-31 are at least allowable as being dependent on an allowable claim.

For the reasons given above, the applicants respectfully submit that Claims 1-31 are in a condition for allowance. The applicant respectfully requests that all rejections be withdrawn and the application be allowed at the earliest date possible. Should the Examiner have any questions or comments, he is encouraged to call the undersigned at (650) 838-4305 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,  
Perkins Coie LLP



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William F. Ahmann  
Reg. No. 52,548

Date: March 17, 2006

**Correspondence Address:**

Customer No. 22918  
Perkins Coie LLP  
P.O. Box 2168  
Menlo Park, California 94026  
(650) 838-4300